

1 BACKGROUND OF THE INVENTION

2
3 FIELD OF THE INVENTION

4 This invention relates to a rotating seat for an amusement ride.

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6 DESCRIPTION OF THE RELATED ART

7 Several patents, *e.g.*, United States patent numbers 5,421,783; 5,649,866; and 5,810,671
8 have a passenger carrier that is accelerated upward by bungee cords and can relatively freely
9 swing about the ends of such cords. There is, however, no control over any rotation of the
10 carrier that does occur.

11 United States patent no. 6,083,111 does involve controlled rotation of a passenger chair
12 (also termed a "support") for an amusement ride. The degree of rotation is, however,
13 purposefully limited; the limited rotation that is possible apparently occurs only over a restricted,
14 fixed portion of a course upon a tower; and only downward movement occurs when the chair has
15 been rotated from its initial substantially vertical position.

16 Lines 31 through 37 in column 2 of patent no. 6,083,111 explain, "The passenger
17 support, together with the passenger, is tilted forward into a falling orientation which is at a
18 predetermined tilt-angle to the pre-fall orientation. The passenger support, together with the
19 passenger, is dropped or propelled from the drop position to a lower position while the passenger
20 support and the passenger are in the forward tilted falling orientation"

21 Lines 3 and 4 in column 3 further clarify, "for safety reasons, the tilt-angle of the
22 passenger and the passenger support is limited"

23 Patent no. 6,083,111 continues, in lines 26 through 28 of column 3, by asserting, "A
24 travel course for the carriage is established by engaging a guide that is connected to the carriage
25 upon an elongate rail or track that is coupled to an elevating tower."

26 Lines 23 through 25, 39 through 42, and 46 through 49 of column 3 state, "The degree of
27 tilt between the pre-fall orientation **92** and the falling orientation **95** is predetermined and
28 restricted When the latching mechanism **40** is released, the passenger support **22** is
29 permitted to tilt or be tilted from the pre-fall orientation **92** toward and into the falling orientation
30 **95**. . . . Alternatively, the tilting action can be induced by an operating mechanism B43B which

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BRIEF DESCRIPTION OF THE DRAWINGS

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Figure 1 shows a first view of the Controllably Rotatable Seat.

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Figure 2 provides an alternate view of the Controllably Rotatable Seat.

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Figure 3 depicts a target on a tower to be detected by a sensor associated with the Controllably Rotatable Seat.

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FIG. 3

DESCRIPTION OF THE PREFERRED EMBODIMENT

The seat 1 is attached to an arm 2 that is rotated by a means for rotating 3 which is preferably an electric motor but which can be pneumatics, hydraulics, or any other mechanism that is well known in the art for producing rotation. (The term "seat" is used herein to mean either a single seat or a group of two or more seats.)

Preferably, but not necessarily, a lever arm 4 connects the arm 2 to the means for rotating 3 so that the point of rotation of the means for rotating 3 will be substantially aligned with the center of gravity of a participant sitting on the seat 1.

Also preferably, but not necessarily, the lower portion 5 of the seat 1 is a saddle seat, *i.e.*, it is formed in substantially the same shape as a saddle for a horse, in order to cause the participant to feel exposed to excitement.

The arm 2 and, consequently, the seat 1 can preferably, but not necessarily, rotate at least ninety degrees.

Preferably, but not necessarily, there would also be a means for retaining the participant to the seat 1, such as a harness.

The arm 2 and the means for rotating 3, as well as the lever arm 4 when employed, are attached to a platform 6, which can be slidably connected to a vertical tower or placed upon any other amusement ride (in fact, some rides, such as the car of a roller coaster, can, themselves, serve as the platform 6), but which is preferably connected to cables 7 that are suspended from towers 8, preferably, but not necessarily three towers. As explained above, each of the cables 7 travels to an elevated point on a tower 8; and the platform 6 is elevated as the cables 7 are retracted down the towers 8. Attachment of the arm 2, and the lever arm 4 when employed, is a rotatable attachment to the platform 6.

A timer 9 communicating with the means for rotating 3 can be programmed with the time to commence rotation and the time to begin rotating the seat 1 to its original orientation.

Alternatively, a target 10 can be located on a tower 8 or other object at a point where rotation is desired to commence as the seat 1 passes the target 10, and a second target 11 can be placed on a tower 8 or other object at a point where it is desired to have the seat 1 start rotating back to its original orientation. A sensor 12 capable of detecting the targets 10, 11 would be mounted on the platform 6 and communicate either directly or through a preferably, but not

1 necessarily, programmable, logic unit 13 such as a computer with the means for rotating 3.
 2 Optionally, only a single target 10 would be employed; and the seat 1 would start rotating as it
 3 passed the target 10 going in a first direction and would begin rotating to its original orientation
 4 as it passed the target 10 going in the substantially opposite direction.

5 A device known in the art for measuring distances could also determine the distance
 6 between a known elevation (or other position) and the platform 6. Such device communicates
 7 through a, preferably, but not necessarily, programmable, logic unit 13 such as a computer with
 8 the means for rotating 3. Initial rotation would commence at a given distance, and rotation back
 9 to the original orientation of the seat 1 would begin at another specified distance, with such
 10 criteria either set into the logic unit 13 at the factory or, when the logic unit is programmable,
 11 programmed into the logic unit 13 by a user. Communication in this embodiment would
 12 preferably, but not necessarily, be by digitally encoded radio signals.

13 Finally, when cables 7 are employed to propel the platform 6, any device well known in
 14 the art for measuring the distance a cable 7 moves could function just as does the device for
 15 measuring distances discussed in the preceding paragraph.

16 Also, as discussed above, any device known in the art for measuring speed or
 17 acceleration or any other measurable criterion associated with the amusement ride could
 18 determine the time for rotation and the time for return of the seat 1 to its original orientation just
 19 as discussed for the device for measuring distances.

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